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ABSTRACT

To facilitate local vocational curriculum evaluation and student job placement, a project was conducted to develop procedures that at a minimal yearly cost would appropriate the basic ideas of the V-TECS (Vocational-Technical Education Consortium of States) catalogs. Focus was on the creation and maintenance of a catalog of job entry skills and other employment data needed by vocational graduates in order to become employable within approximately a fifty-mile radius of the North Lawrence Area (Indiana) Vocational-Technical Center. It was intended that the procedures would be usable by other school systems with a minimal data processing capability. Computer programs were written and procedures developed to create, maintain, and use two low-cost computerized data files: a student file with catalogued skills achieved both in school and through on-the-job training after graduation and a potential-employer file of specific job titles with their required skills. The catalog and data files have the capability to (1) provide a list of potential applicants in response to inquiries from prospective employers, (2) notify students of job opportunities utilizing their skills for as long as they chose to remain active in the file, (3) provide local job information to students and staff, and (4) compare the acquired skills of the graduates (i.e., curriculum results) with the recorded needs of local industry. All major activities are controlled by one computer program: file update, student notification, industry list of potential applicants, and tally of skill codes. (Appendixes contain all the input and output formats as well as the BASIC program and its English translation.) (JT)

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ED159362

FINAL REPORT

"A Skill Catalog for Curriculum Evaluation and Student Placement"

A Demonstration Exemplary Project

by

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and

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State of Indiana

State Board of Vocational and Technical Education

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U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

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TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC) AND THE ERIC SYSTEM CONTRACTORS."

OUR PROBLEM

The staff of the North Lawrence Area Vocational-Technical Center has always recognized the important role of placement and curriculum evaluation within the total picture of vocational education. However, the accomplishment of those activities is sometimes difficult. Some of the problems encountered are as follows:

1. The school system budget is sufficiently limited that no "Student Placement Co-ordinator" position exists within the school system. Consequently, no such assistance is available to vocational students.

2. Vocational placement is therefore a combined activity of the Vocational Director, Career Counselor and the Instructors. Consequently, placement references are bound by these constraints:

   A. Detailed information on student skills resides with each instructor. That condition causes no difficulty until the instructor is out of town during the summer or otherwise unavailable to help reply to an industry's request or to notify qualified students.

   B. Staff turnover in any subject area means that most all former graduates in that area are cut off from further placement references, since the new instructor will have had no personal contact with them.

   C. Instructors who remain from year to year have increasing difficulty remembering details of all former students who might fit some job opening.

   D. Inclusion of student skills on some form of paper permanent record is of some assistance. However, the amount of time consumed by manual searches through permanent files increases with each year the school remains in operation.

   E. For whatever reason, it seems that students currently employed are usually not notified through the school of job openings for which they might be qualified and in which they might be interested.

3. Except for large-scale manual searches through permanent records, any quantitative evaluation of vocational graduates' skills vs. the local job structure is virtually impossible.

4. No easy method is available to inform high school students of the number and types of local positions requiring specific combinations of skills. The local office of the Indiana Employment Security Division is concerned primarily with current vacancies. Information concerning the overall relationship between skills and local job locations resides in the combined experience of its staff and is thus not readily available for student guidance.

5. New instructors who may be unfamiliar with the specifics of the local job environment have no single source of reference concerning local opportunities for students.

OUR OBJECTIVES

Our overall objective was to develop procedures that at a minimal yearly cost would appropriate the basic ideas of V-TECS catalogs, etc. for local use in curriculum evaluation and student placement. We intended to end up with procedures that would be usable by other school systems of any size that would have at least a minimal data processing capability.

The subdivisions of that overall objective were:

1. To develop the procedures that would allow the creation and maintenance of a catalog of job entry skills and other employment data needed by vocational graduates in order to become employable within approximately a fifty mile radius of the North Lawrence Area Vocational-Technical Center.

2. To begin the construction of such a catalog as staff input became available during the 76-77 school year.

3. To write the programs and develop the procedures needed to create, maintain and use a low-cost computerized:

   A. Student data file with catalogued skills achieved both in school and through on-the-job training after graduation.

   B. Potential-employer data file of specific job titles with their required skills.

4. To begin building both files during the 76-78 school years.

5. To be able to use the catalog and two data files to:

   A. Provide a list of potential applicants in response to inquiries from prospective employers.

   B. Notify students of job opportunities utilizing their skills for as long as they chose to remain active in the file.

   C. Provide local job information to students and staff.

   D. Compare the acquired skills of the graduates (i.e. curriculum results) with the recorded needs of local industry.

OUR PROCEDURES AND PRODUCTS

The appendices at the end of this report include all the input and output formats as well as the BASIC program and its English translation. Explanatory comments located in those appendices will not be duplicated here. A general summary of our system follows.

Skill Catalog (See Appendix A)

One essential key to the process is, of course, the program required to make the system function. However, of no less importance is the existence of a "skill catalog" appropriate to the geographical area in which it will be used.

Our catalog was begun by inviting all interested instructors to make their contributions in conjunction with their individual advisory committees. Those instructors were, for the most part, those who had begun to consider their own alternative solutions to the problems defined in the first section of this report.

The general guidelines suggested for contributions from any subject area were:

1. The skills to be listed should be those groups of skills used by prospective employers to make decisions between job applicants. The skill list should not itemize every separate skill involved in the school curriculum or on the job. Any skill group that is always considered to be one package (i.e. the separate activities are of no practical use as an isolated skill) should be one entry in the catalog.

2. The skills should be organized so that every student in a given subject area does not automatically end up with the same list in their individual records. So long as we use our present small computer system, the total catalog for any subject area probably should not exceed 18-20 entries, unless there are numerous branches in the subject all of which no one student would complete. This total would allow a student to have room to update his file with post-graduation job training and still remain within the restriction of a maximum of 22 skill codes per record.

3. The staff input will constitute the initial content of the catalog. Industry input will then be used to increment or modify the catalog contents.

Enrollment Form (See Appendix B)

The enrollment form was designed to mirror the actual student or company record in the tape file. Instructors were asked to decide whether they wished to have their 1977 graduates enrolled. If yes, they were asked to return an enrollment form for every student. The students controlled the active-inactive status of their record by their signatures at the bottom. As a result, the entire class input was available for later curriculum analysis, etc. even though some students might prefer to remain inactive in terms of job notification, etc.

This form is available to the entire staff during the school year so that early withdrawals, etc. can be added to the student file at any time. In addition, changes to student records can occur at any time. Those changes can be received from previous students by phone or letter so long as their Social Security Number is included.

The DP section uses this same outline to organize industry input as it is received throughout the year.

Program (See Appendices C, D, E)

Our computer system is a Wang Labs 2200B-2 8K processor with CRT, three cassette tape drives, a 250 card/minute punched card reader and a 150 character/second matrix printer. The computer is backed by a unit record system.

The program is designed to allow all major activities to be controlled by the one program. These major jobs are (A) File Update, (B) Student Notification, (C) Industry List of Potential Applicants and (D) Tally of Skill Codes. The operator is guided through all decisions by responding to questions on the CRT screen. In that way, the operator performs such functions as choosing the specific job to be accomplished, inputting the skill codes to be located, inputting the job information to be included in letters or lists or loading current or scratch master tapes as told to do so in the update run.

Output (See Appendices G,H)

Student Control

The postage field in each student record reflects the active/inactive status of that student. So long as postage remains in the record, that student will be notified of all industry requests that include his/her particular skills. This means that students that are presently employed may decide to remain active for notification. (This is in contrast to the lack of information usually given to former students who are employed at the time other job openings come to the school's attention.)

The renewal of a depleted postage account could either be accomplished on an individual basis at any time during the year or as a result of some annual registration using some set fee for all.

Our present storage limitations (tape) makes the deduction of postage for mailings very awkward. The deduction must be entered during an update after the student letters are produced. If we operated in a disk environment, it would be a simple matter to alter the program to deduct the proper postage amount each time a student letter was produced by the system.

The student is notified when the postage field contains an insufficient amount. He or she can then remit whatever amount they wish to use or can allow the record to become inactive by default. If the latter event occurs, the record can be re-activated at any time by simply adding the postage.

Another element of student control is the possibility of entering skills from on-the-job training after graduation. These entries become part of the skill code section of the student record and are included in all subsequent skill code searches. The skill-level digit of "5" is used to separate that type of entry from the "1" through "3" levels that record an instructor evaluation (see Appendix H for skill level interpretation).

Benefits

As the skill catalog grows and as vocational student input is added each year, we expect that this automated system will be able to play an increasingly active role in communicating with students and industry for a much lower cost than would be incurred if we added a staff member to maintain some manual placement record of student skills, industry requests, etc.

In addition, these files have open-ended possibilities for other uses, presently undefined. Examples might range from the mundane production of addresses for follow-up studies to cross-referencing follow-up input with graduation skills and ability levels, etc.

The file could also be expanded to include all local high school students instead of maintaining records for vocational students only. The presence of the on-the-job-training skill level could allow student entries to occur even though staff evaluation might not be practical. The independent control available through the postage field could make the file maintenance almost self-sufficient regardless of its size. The only practical limitation would be the computer processing speed so that file searches could be accomplished within reasonable time limits.

APPENDICES

APPENDIX A

THE SKILL CATALOG
(A Beginning)

1. The purpose of this skill catalog is to identify those skill areas that are evaluated by employers in the process of choosing between applicants for any given position within this geographical area. The contents are purposely designed not to include all facets of all skills involved on the job. The staff was encouraged to group under one title those small skills that are usually considered to be needed as a complete skill package on any job that would require them.

2. These skill areas are initially organized by the instructional staff. They undergo change as industry input creates changes of emphasis, content, etc.

3. Each six-digit skill code consists of a four-digit subject area PVI number and a two-digit suffix assigned by the school staff.

4. General skills that cross numerous areas are arbitrarily coded in the Guidance PVI section.

5. One of these codes, preceded by a two-digit year of certification and followed by a one-digit skill evaluation, constitutes one entry in a student's record. The nine-digit entry is packed into five bytes for storage in each master record. Each student's record can contain a maximum of 22 such entries.

6. All catalog entries are entered on punched cards so that the list can be reprinted easily as the catalog changes and grows.

Skill Catalog

140201 PERFORM KEYPUNCH PUNCTION & PROG. CARD CONSTRUCTION
140204 KEYPUNCH 60WR/HOUR MINIMUM
140205 KEYPUNCH 9WRR/HOUR MINIMUM
140210 OPERATE UNIT RECORD WITH SUPERVISION
140213 WIRE UNIT RECORD BASIC OPERATIONS
140217 EXHIBIT UP PROBLEM-SOLVING "COMMON SENSE"
140220 WRITE PROGRAMMABLE CALCULATOR ASSEMBLY LANGUAGE
140253 DESCRIBE 1403 PRINTER & MAG. TAPE OPERATIONS
140225 PROGRAM DARTMOUTH BASIC
140230 PROGRAM EXTENDED BASIC WITH CARD INPUT
140240 READ FORTRAN
140245 PROGRAM CARD ENVIRONMENT RPG
140250 DO DECIMAL, BINARY, & HEXADEC. CONVERSIONS
140255 PROGRAM CARD-ENVIRONMENT COBOL
140260 PROGRAM MULTI-TOTAL REPORT FORMATS
140265 PROGRAM TAPE-FILE MAINTENANCE (EXT. BASIC)
140270 DEMONSTRATE 85 ITEM OP VOCABULARY
140275 CONSTRUCT JCL DECKS

140301 TYPEWRITING
140302 FILING
140303 DUPLICATION
140304 TRANSCRIBER
140305 TELEPHONE
140306 USING CALCULATOR
140307 HANDWRITING
140309 PROOFREADING
140317 UNDERSTANDING OF OFFICE MECHANICAL DEVICES
140321 SHORTHAND
140322 ACCOUNTING

170350 ENGINES
170351 FUEL SYSTEMS
170352 LUBRICATING CHASSIS
170353 COOLING SYSTEM
170354 STARTING SYSTEMS
170355 CHARGING SYSTEMS
170356 IGNITIONS SYSTEMS
170357 OTHER ELECTRICAL
170358 EMISSION CONTROLS
170359 ENGINE TESTING EQUIPMENT
170360 ENGINE TROUBLE DIAGNOSIS
170361 MANUAL TRANSMISSION
170362 AUTOMATIC TRANSMISSION
170363 REAR AXLE & DRIVE LINE
170364 STEERING AND SUSPENSION
170365 BRAKES
170366 HEATING & AIR CONDITIONING
170367 TIRE & TIRE SERVICE

171901 LAYOUT
171902 PASTE-UP
171903 HAND-SETTING TYPE
171904 COLD COMPOSITION
171905 JUSTIFYING COPY
171906 PROCESS PHOTOGRAPHY
171907 DIFFUSSION PROCESS PRINTS
171908 FLAT STRIPPING
171909 PLATE MAKING
171910 DIFFUSION PLATE PROCESS
171911 PRESS OPERATION MULTILITH
171912 PRESS OPERATION DAVIDSON
171913 PRESS OPERATION A.B.DICK
171914 LETTERPRESS OPERATION
171915 SCREEN PROCESS OPERATION
171916 PAPER CUTTING
171917 FOLDING
171918 PADDING
171919 DRILLING

172350 SHIELDED METAL ARC WELDING
172351 OXYACETYLENE WELDING
172352 OXYACETYLENE CUTTING
172353 GAS METAL ARC WELDING
172354 GAS TUNGSTEN ARC WELDING
172399 BLUE PRINT READING & MATERIAL SELECTION FOR WELDING

200005 ABILITY TO MAKE DECISIONS
200010 ABILITY TO MEET THE PUBLIC
200015 ADAPTABILITY
200020 ARITHMETIC COMPUTATION
200025 DEPENDABILITY
200030 INITIATIVE
200035 NEATNESS OF APPEARANCE
200040 ORAL EXPRESSION
200045 SPELLING
200050 TACT WITH PEOPLE
200055 WORKS WELL WITH OTHERS

APPENDIX B

PLACEMENT FILE MAINTENANCE FORM
(Student and Industry)

1. This form is used to enter all information into either the student or industry file. Entries in any field in lines one or two will be placed in the same relative location within the master record. Entries in area three will be placed in the first available location in the master record. If they match codes already in the file, they will replace that item. Otherwise, they will occupy the first blank location within lines three or four of the master record (see Appendix C).

2. This form is available to all staff members. Students may change the biographical items in their record by correspondence or phone so long as their Social Security number is known. Skill codes for on-the-job training may also be added at any time.

3. Entries for the industry file are made with this same form because the master records for both the industry and student files are organized identically. This allows one program to process either file.

4. Company/job record keys contain alphabetic characters so no accidental match with any Social-Security number can occur.

5. Information from this form is entered onto punched cards in the columns indicated. These cards then become the transaction file for a batch update of the complete master file. Note that the Social-Security number (or company/job ID) occurs in columns two through ten of each card. It occurs twice on cards for line #1, in columns 2 - 10 and in 11 - 19. The first occurrance (2 - 10) becomes the transaction key; the second one (11 - 19) is the card image field that is placed in the master record. Column one of each transaction card is the line # circled on this form, i.e. 1, 2, 3, 5 or 6.

B-2

VOCATIONAL PLACEMENT FILE

(Student/Industry)

DATED ROUTING
- ___ Instructor
- ___ DP
- ___ File

Name (Last, First) _____ Graduation Yr. _____ Date _____

Check one:
- ___ Add to file
- ___ Delete from file (9)

2 (11)
Social Security No.
(Company/Job ID)

(1)

20 Student Name (Last, First, Initial) (Company Name)

39 Street Address

54 City

67 State

(2)

11 Zip Code

16 Phone

23 Mo / Day / Yr. Birthdate

29 Sex (M or F)

30 Total Days Enrolled

33 Total Absences

For Industry File Only

40 Job Title

54 Number of Positions

5/6 11 Cents postage added/subtracted (indicate which)

(3) Skill Codes & Levels

11,20,29,38,47 Year of Evaluation (19__)

13 Code 1	Level 1	22 Code 2	Level 2	31 Code 3	Level 3	40 Code 4	Level 4	49 Code 5	Level 5
13 Code 6	Level 6	22		31		40		49	
13		22		31		40		49	
13		22		31		40		49	

I want my file to be active Yes, Signature _____

No, Signature _____

Release form is on file ___ yes ___ no

_____
Instructor's Signature

12

13

APPENDIX C

MASTER RECORD LAYOUT

1. The record is organized so that it can function in either the student or the industry file.

2. Any entry in any field on lines 1 or 2 of the Placement File Maintenance Form causes that entry to occur in the same relative location in the master record.

3. The record is stored as a 232 byte array (4x58). Each line # (1 or 2) of the Maintenance Form points to the 58 byte array element that contains that set of fields.

4. This record is organized around the Wang 2200 limitations in that each tape block automatically contains 253 usable bytes, whether used or not. In addition, no single data element may exceed a 64 byte length.

C-2

IBM

INTERNATIONAL BUSINESS MACHINES CORPORATION

GX24-6599-0
Printed in U.S.A.

MASTER TAPE RECORD LAYOUT FORM

Company _____

Application Vocational Placement by _____ Date _____ Job No. _____ Sheet No. 1 of 1

① Social Security No. (or company/job ID) | Student Name (Company Name) | Street Address | City | State

② Zip Code | Phone | Birthdate M / D / Y | Sex | Total Days Enrolled | Total Absent | Postage (cents) | In Industry File only: Job Title | Number of Positions

③ Each skill code is 9 digits packed into 5 bytes (Evaluation Year xx; Skill Code xxxxxx; Skill Level x)

Skill Code 1 | Code 2 | Code 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11

④ Skill Code 12 | Code 13 | Code 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22

15

16

APPENDIX D

ENGLISH TRANSLATION OF THE COMPUTER PROGRAM

1. This translation is included for two purposes: (A) to assist readers unfamiliar with the BASIC programming language; (B) to help other programmers understand Wang's BASIC implementation if they need to translate any portion of the program for use on a different system.

2. The translation is line for line for almost all sections. All reference numbers are the actual statement numbers of the program.

3. Some background for readers unfamiliar with programming logic:

   (A) The instruction sequence follows in consecutive order down each page unless the reader is told to skip someplace else. The reader must make that skip, otherwise the sequence will make no sense.

   (B) Any statement that begins with an "IF" will cause a skip to occur if the answer to the question asked is true. However, if that answer is false or no, then the program continues straight ahead as if that question were never asked.

   (C) Any statement that says "Do routine - - - and come back" will transfer the reader to the new location only temporarily. At the end of that new routine, the reader will return to the original location and continue on with the next sentence that follows the "Do routine - - -" statement.

```
0010     -
0020     INDICATE STORAGE SPACE NEEDED FOR SPECIFIC VARIABLES
0030 A   SET "END OF MASTER" SENTINEL
     B   SET "END OF TRANSACTION" SENTINEL
     C   SET "CURSOR CONTROL"
     D   SELECT TAPE ADDRESSES FOR "OLD" & "NEW" MASTER
     E   CLEAR "READ" & "WRITE" COUNTERS
     F   SKIP TO 9800


0300 A   SET "OPTION-FOUND" SWITCH ON
     B   SET OPTION-LINE-HOLD TO 0
     C   BEGIN LOOP X (REPEAT FOR EACH SKILL CODE REQUESTED IN ROUTINE 8000)
     D        MOVE A SKILL CODE TO THE WORK AREA
     E        IF THIS SKILL CODE IS AN OPTIONAL ONE, SKIP TO 350
     F        DO ROUTINE 500-520 & COME BACK (SEARCH STUDENT RECORD FOR CODE)
     G        IF STUDENT DOESN'T HAVE THIS REQUIRED SKILL, SKIP TO 320
     H        SET 'OPTION-FOUND' SWITCH ON
0310 A   END LOOP X (GO BACK TO 300C UNLESS FINISHED WITH SKILL LIST)
     B   IF THE LAST OPTIONAL GROUP DIDN'T FIND A MATCH, SKIP TO 330
     C   INDICATE THAT THIS STUDENT RECORD CONTAINS ALL THE REQUESTED CODES
     D   RETURN TO SENDING STATEMENT (1010E, 2010D)
0320 A   SET COUNTER TO FORCE END OF LOOP
     B   END LOOP ARTIFICIALLY
0330 A   INDICATE THAT THIS RECORD DOES NOT CONTAIN ALL THE REQUESTED CODES
     B   RETURN TO SENDING STATEMENT (1010E, 2010D)
0350 A   IF THE OPTION-LINE-# HAS CHANGED, SKIP TO 370
     B   WE'RE STILL DEALING WITH A PREVIOUS OPTION GROUP.  IF ONE OF THE OPTIONS
           HAS ALREADY BEEN FOUND, THEN SKIP BACK TO 310A
0360 A   SET "OPTION-FOUND" SWITCH OFF
     B   DO ROUTINE 500-520 & COME BACK (SEARCH STUDENT RECORD FOR SKILL CODE)
     C   MOVE OPTION-LINE-# TO OPTION-LINE-HOLD
     D   IF STUDENT DIDN'T HAVE THIS OPTIONAL SKILL, SKIP TO 310A
     E   SET "OPTION-FOUND" SWITCH ON
     F   SKIP BACK TO 310A
0370 A   IF ONE OF THE OPTIONAL CODES OF THE PREVIOUS GROUP HAD BEEN FOUND, SKIP
           TO 360 TO START A NEW GROUP
     B   SINCE NONE OF THE PREVIOUS GROUP OF OPTIONAL CODES WERE FOUND, THERE'S
           NO NEED TO SEARCH ANY FURTHER, SO SKIP TO 320 TO TERMINATE SEARCH


0500 A   SET "FOUND" SWITCH OFF
     B   BEGIN LOOP L (CHECK THE 3RD & 4TH LINES OF THE RECORD)
     C        BEGIN LOOP W (CHECK EACH CODE IN THE LINE.  EACH CODE OCCUPIES FIVE
                SPACES
     D             IF A CODE IS BLANK, SKIP TO 520
     E             IF A SKILL CODE MATCHES THE REQUESTED ONE, SKIP TO 510
     F        END LOOP W (GO BACK TO 500C UNLESS FINISHED)
     G   END LOOP L (GO BACK TO 500B UNLESS BOTH ROWS HAVE BEEN CHECKED)
     H   RETURN TO SENDING STATEMENT (300F, 360B, 700C, 5510E)
0510 A   SET "FOUND" SWITCH ON
0520 A   SAVE THE LAST LINE # USED
     B   SAVE THE LAST CODE LOCATION USED
     C   -
     F   ARTIFICIALLY FINISH THE L & W LOOPS (SEE 500B - 500G)
     G   RETURN TO SENDING STATEMENT (300F, 360B, 700C, 5510E)
```

```
0600 A  DESIGNATE THIS AS SUBROUTINE '40 THAT WILL USE NUMERIC ARGUMENT Z9
     B  MOVE SCREEN CURSOR DOWN "Z9" LINES
     C  RETURN TO SENDING STATEMENT (7200B, 8200B, 8210A, 8220C, 8400B, 8700A)


0700 A  BEGIN LOOP X (REPEAT FOR EACH SKILL CODE REQUESTED IN ROUTINE 8000)
     B       MOVE A SKILL CODE TO THE WORK AREA
     C       DO ROUTINE 500-520 & COME BACK (SEARCH STUDENT RECORD)
     D       IF STUDENT DOESN'T HAVE THIS SKILL, SKIP TO 710
     E       ADD ONE TO THE TOTAL FOR THIS CODE
0710 A  END LOOP X (GO BACK TO 700A UNLESS FINISHED WITH SKILL LIST)
     B  RETURN TO SENDING STATEMENT (3010D)


1000 A  CLEAR SCREEN & PRINT TITLE ON TOP LINE
     B  SPACE 1 LINE
     C  DO ROUTINE 8000-8045 & COME BACK (ENTER SKILL CODES TO BE SEARCHED)
     D  DO ROUTINE 8050-8085 & COME BACK (ENTER JOB INFORMATION)
1010 A  DO ROUTINE 6000-6130 & COME BACK (GET A STUDENT RECORD FROM TAPE)
     B  IF FILE IS FINISHED, SKIP TO 1020
     C  DO ROUTINE 5900 & COME BACK (MOVE RECORD INTO WORK AREA)
     D  IF NO POSTAGE IS AVAILABLE IN THIS RECORD, IGNORE IT & SKIP BACK TO
        1010A
     E  DO ROUTINE 300-370 & COME BACK (SEARCH RECORD FOR NEEDED SKILLS)
     F  IF RECORD DOESN'T INCLUDE ALL NEEDED SKILLS, IGNORE & SKIP BACK TO
        1010A
     G  DO ROUTINE 8200-8230 & COME BACK (PRINT STUDENT LETTER)
     H  SKIP BACK TO 1010A
1020 A  RETURN ALL PRINTING TO SCREEN
     B  REWIND MASTER TAPE
     C  STOP PROGRAM. PRINT "JOB DONE" ON THE SCREEN


2000 A  SEND ALL PRINTING TO THE SCREEN
     B  CLEAR SCREEN & PRINT TITLE ON THE TOP LINE
     C  SPACE 1 LINE
     D  DO ROUTINE 8000-8045 & COME BACK (ENTER SKILL CODES TO BE SEARCHED)
     E  DO ROUTINE 8050-8085 & COME BACK (ENTER JOB INFORMATION)
     F  DO ROUTINE 8400-8430 & COME BACK (PRINT LEAD PARAGRAPH)
2010 A  DO ROUTINE 6000-6130 & COME BACK (GET A RECORD FROM TAPE)
     B  IF FILE IS FINISHED, SKIP TO 2040
     C  DO ROUTINE 5900 & COME BACK (MOVE RECORD INTO WORK AREA)
     D  DO ROUTINE 300-370 & COME BACK (SEARCH RECORD FOR NEEDED SKILLS)
     E  IF RECORD DOESN'T INCLUDE ALL NEEDED SKILLS, IGNORE & SKIP BACK TO
        2010A
     F  DO ROUTINE 8500-8520 (PRINT STUDENT INFO)
     G  SKIP BACK TO 2010A
2040 A  MOVE PAPER TO TOP OF NEXT FORM
     B  RETURN ALL PRINTING TO THE SCREEN
     C  REWIND MASTER TAPE
     D  STOP PROGRAM. PRINT "JOB DONE" ON THE SCREEN
```

```
3000 A  BEGIN LOOP X (REPEAT 15 TIMES, ONCE FOR EACH TOTAL COUNTER)
     B       SET THIS TOTAL COUNTER TO ZERO
     C  END LOOP X (GO BACK TO 3000A UNLESS FINISHED WITH 15TH COUNTER)
     D  CLEAR SCREEN & PRINT TITLE ON TOP LINE
     E  SPACE 1 LINE
     F  DO ROUTINE 8000-8045 & COME BACK (ENTER SKILL CODES TO BE COUNTED)
3010 A  DO ROUTINE 6000-6130 & COME BACK (GET A RECORD FROM TAPE)
     B  IF FILE IS FINISHED, SKIP TO 3040
     C  DO ROUTINE 5900 & COME BACK (MOVE RECORD INTO WORK AREA)
     D  DO ROUTINE 700-710 & COME BACK (COUNT # OF REQUESTED SKILLS LOCATED
        IN THIS RECORD)
     E  SKIP BACK TO 3010A
3040 A  BEGIN LOOPX (REPEAT FOR EACH SKILL CODE FOR WHICH A TALLY WAS REQUESTED
        AT 3000F)
     B     PRINT SKILL CODE
     C     PRINT ITS TOTAL, THEN MOVE CURSOR TO NEXT 16 CHARACTER PRINT ZONE
     D  END LOOP X (GO BACK TO 3040A UNLESS FINISHED)
     E  ISSUE A CARRIAGE RETURN COMMAND
     F  REWIND MASTER TAPE
     G  STOP THE PROGRAM.  PRINT 'JOB DONE' ON THE SCREEN


5000 A  DO ROUTINE 8800-8810 & COME BACK (SET UP FIELD LOCATIONS FOR MASTER
        RECORD)
     B  DO ROUTINE 7000-7020 & COME BACK (READ TRANSACTION FROM CARD READER)
5010    DO ROUTINE 6000-6130 & COME BACK (GET A RECORD FROM TAPE)
5020 A  IF MASTER KEY IS GREATER OR EQUAL TO TRANSACTION KEY, SKIP TO 5030
     B  DO ROUTINE 6500-6510 & COME BACK (WRITE UNMATCHED MASTER TO NEW TAPE)
     C  SKIP BACK TO 5010
5030 A  IF MASTER KEY IS GREATER THAN TRANSACTION KEY, SKIP TO 5040
     B  DO ROUTINE 5900 & COME BACK (MOVE MASTER RECORD INTO WORK AREA)
     C  DO ROUTINE 5800-5820 & COME BACK (UPDATE MASTER RECORD WITH ALL
        TRANSACTION INFORMATION & WRITE FINISHED RECORD TO NEW TAPE)
     D  SKIP BACK TO 5010
5040 A  IF THE TRANSACTION KEY INDICATES THAT THE TRANSACTION FILE IS FINISHED,
        SKIP TO 5050
     B  DO ROUTINE 5800-5820 & COME BACK (CREATE NEW MASTER RECORD WITH ALL
        TRANSACTION INFORMATION & WRITE FINISHED PRODUCT TO NEW TAPE
     C  SKIP BACK TO 5020
5050    (PROGRAM GETS TO THIS SECTION ONLY WHEN BOTH MASTER & TRANSACTION FILES
        ARE COMPLETED)
     A  DO ROUTINE 6500-6510 & COME BACK (WRITE MASTER SENTINEL RECORD TO NEW
        TAPE)
     B  DO ROUTINE 9860 & COME BACK (FINISH MASTER TAPE & REWIND ALL)
     C  STOP PROGRAM & PRINT "JOB DONE" ON THE SCREEN
```

```
5400 A  IF TRANSACTION INFO IS FOR LINE 1, SKIP TO 5410
     B  IF THERE'S NO SOCIAL SECURITY # ALREADY IN THIS WORK AREA, THE
          ACTIVITY IS INVALID, SO SKIP TO 5790
     C  IF THE TRANSACTION LINE # IS GREATER THAN 2, SKIP TO 5500
5410    SET COUNTER Y TO ZERO
5420 A  INCREASE Y BY 1
     B  IF WE'RE AT THE END OF THE FIELDS FOR LINE L, SKIP TO 5470
     C  -
     E  DETERMINE BEGINNING POINT & THE LENGTH FOR FIELD # Y OF LINE # L
     F  IF THAT FIELD LOCATION ON THE TRANSACTION RECORD IS BLANK, NO CHANGE IS
          NEEDED FOR THAT FIELD, SO SKIP BACK TO 5420 TO CHECK NEXT FIELD IN
          THIS LINE
     G  MOVE FIELD FROM TRANSACTION RECORD INTO ITS CORRECT SPOT IN THE WORK
          AREA
     H  SKIP BACK TO 5420 TO CHECK NEXT FIELD IN THIS LINE
5470 A  IF ACTIVITY HAS OCCURRED ON EITHER LINE 1 OR 2, BUT NO RECORD KEY
          (SOCIAL SECURITY #) IS INCLUDED, THEN ALL ACTIVITY WAS INVALID, SO
          SKIP TO 5790
     B  RETURN TO SENDING STATEMENT (5810B)
5500    IF THE TRANSACTION LINE # IS GREATER THAN 3, SKIP TO 5600
5510 A  BEGIN LOOP S1 (REPEAT FOR EACH CODE INCLUDED IN TRANSACTION RECORD)
     B       IF THIS FIELD IN TRANSACTION IS BLANK, THEN THIS TRANSACTION IS
               FINISHED, SO SKIP TO 5530
     C  -

     D       CHANGE SKILL CODE IN TRANSACTION TO A FORMAT THAT WILL MATCH THE
               CODES IN THE MASTER RECORD
     E       DO ROUTINE 500-520 & COME BACK (FIND MATCH OR EMPTY SPACE)
     F       IF THIS TRANSACTION CODE INDICATES A DELETION, SKIP TO 5520
5515 A  -
     B       MOVE TRANSACTION SKILL CODE INTO PROPER LOCATION IN WORK AREA
     C  END LOOP S1 (GO BACK TO 5510A UNLESS FINISHED WITH CODE LOCATIONS)
5520 A  SET THIS CODE LOCATION TO BINARY ZERO
     B  OPTIONAL END OF LOOP S1
     C  RETURN TO SENDING STATEMENT (5810B)
5530 A  -
     B  ARTIFICIALLY END LOOP S1
     C  RETURN TO SENDING STATEMENT (5810B)
5600 A  IF THE TRANSACTION LINE # IS GREATER THAN 6, SKIP TO 5700
     B  IF THE POSTAGE AREA IN THE MASTER RECORD IS BLANK, SKIP TO 5620
     C  CHANGE POSTAGE AMOUNT IN THE MASTER RECORD TO NUMERIC FORM
5610 A  CHANGE POSTAGE AMOUNT IN THE TRANSACTION RECORD TO NUMERIC FORM
     B  IF THE LINE # IS 5 OR 6, DO ROUTINES 5640 OR 5650 RESPECTIVELY & COME
          BACK (ADD OR SUBTRACT POSTAGE VALUES)
     C  CHANGE NEW POSTAGE TOTAL BACK INTO PROPER FORM & STORE INTO MASTER
          RECORD
     D  RETURN TO SENDING STATEMENT (5810B)
5620 A  SET MASTER RECORD POSTAGE VALUE AS ZERO
     B  SKIP TO 5610
5640 A  ADD TRANSACTION POSTAGE TO ORIGINAL POSTAGE VALUE
     B  RETURN TO SENDING STATEMENT (5610B)
5650 A  SUBTRACT TRANSACTION POSTAGE FROM ORIGINAL POSTAGE VALUE
     B  RETURN TO SENDING STATEMENT (5610B)
5700 A  IF TRANSACTION LINE # ISN'T A 9, THEN SOMETHING'S WRONG.  SKIP TO 5710
     B  SET DELETE SWITCH TO 1 (LINE 9 MEANS 'DELETE THIS RECORD')
     C  RETURN TO SENDING STATEMENT (5810B)
```

```
5710 A  PRINT ERROR MESSAGE ON THE SCREEN
     B  STOP THE PROGRAM UNTIL OPERATOR SAYS TO CONTINUE
     C  WHEN CONTINUE KEY IS PRESSED, DO ROUTINE 9850 & COME BACK (CLEAR SCREEN)
     D  RETURN TO SENDING STATEMENT (5810B)
5790 A  PRINT ERROR MESSAGE ON THE SCREEN
     B  SET TEMPORARY DELETE SWITCH TO 1
     C  STOP THE PROGRAM
     D  WHEN CONTINUE KEY IS PRESSED, DO ROUTINE 9850 & COME BACK (CLEAR SCREEN)
     E  RETURN TO SENDING STATEMENT (5810B)


5800 A  MOVE TRANSACTION KEY TO WORK AREA KEY HOLD AREA
     B  TURN DELETE SWITCH OFF
5810 A  TURN TEMPORARY DELETE SWITCH OFF
     B  DO ROUTINE 5400-5790 & COME BACK (UPDATE ALL FIELDS WITH TRANSACTION
           INFORMATION)
     C  DO ROUTINE 7000-7020 & COME BACK (GET ANOTHER TRANSACTION RECORD)
     D  IF THIS NEW TRANSACTION IS ALSO FOR THE RECORD WE HAVE IN THE WORK AREA,
           SKIP BACK TO 5810A (IF IT HAS A DIFFERENT SOCIAL SECURITY NUMBER,
           THEN WE'RE FINISHED WORKING WITH THE RECORD IN THE WORK AREA)
     E  IF THE DELETE SWITCH IS ON, SKIP TO 5820
     F  IF THE TEMPORARY DELETE SWITCH IS ON, SKIP TO 5820 (THIS WOULD OCCUR
           IF THE TRANSACTION PLACED FIELDS INTO THE WORK AREA FOR A NEW
           RECORD BUT DID NOT INCLUDE THE RECORD KEY)
     G  DO ROUTINE 7200 AND COME BACK (WRITE WORK AREA RECORD TO NEW TAPE)
     H  RETURN TO SENDING STATEMENT (5030C, 5040B)
5820 A  CLEAR WORK AREA TO BLANKS
     B  RETURN TO SENDING STATEMENT (5030C, 5040B)


5900 A  -
     C  MOVE THE 4 LINES OF THE MASTER RECORD INTO THE WORK AREA
     D  RETURN TO SENDING STATEMENT (1010C,2010C,3010C,5030B)


6000 A  IF THIS IS THE 1ST TIME THIS ROUTINE HAS BEEN EXECUTED, SKIP TO 6110
     B  READ A MASTER RECORD FROM TAPE
     C  IF THIS TAPE IS FINISHED, SKIP TO 6100
     D  STORE RECORD KEY (SOCIAL SECURITY #)
     E  IF THIS RECORD KEY IS THE '999999999' NUMBER THAT INDICATES THE END
           OF THE FILE, SKIP TO 6010
     F  INCREASE THE 'READ' COUNT BY 1
6010    RETURN TO SENDING STATEMENT (1010A,2010A,3010A,8010A)
6100    REWIND THE OLD MASTER RECORD TAPE
6110 A  IF J IS 1, SKIP TO 6140 (TO SET UP 1ST MASTER FILE)
     B  STOP THE PROGRAM & PRINT MESSAGE FOR THE OPERATOR
     C  SET '1ST TIME' SWITCH ON
6120    READ FIRST TAPE HEADER
6130 A  READ SECOND TAPE HEADER
     B  DO ROUTINE 9850 & COME BACK (CLEAR SCREEN)
     C  SKIP TO 6000
```

```
6500 A  DO ROUTINE 6800-6840 & COME BACK (CHECK HOW MUCH TAPE HAS ALREADY BEEN
        USED)
     B  WRITE MASTER RECORD TO NEW TAPE
     C  IF THIS RECORD WAS THE END OF FILE SENTINEL, SKIP TO 6510
     D  INCREASE THE 'WRITE' COUNT BY 1
6510 A  MOVE THE CURSOR TO THE TOP OF THE SCREEN & WRITE THE MASTER KEY ALONG
        WITH THE CURRENT READ & WRITE TOTALS
     B  RETURN TO SENDING STATEMENT (5020B,5050A)


6800 A  INCREASE BLOCK COUNT BY 1 (EACH RECORD TAKES 1 BLOCK ON TAPE)
     B  IF THIS IS BLOCK #1, SKIP TO 6820
     C  IF BLOCK COUNT IS GREATER THAN 550, SKIP TO 6810 (300 FT TAPE
        CAPACITY IS APPROXIMATELY 550 BLOCKS)
     D  RETURN TO SENDING STATEMENT (6500A,7200G)
6810 A  WRITE END OF TAPE RECORD TO THE NEW TAPE
     B  REWIND THE NEW TAPE
6820    STOP THE PROGRAM & PRINT INSTRUCTION FOR OPERATOR TO CHANGE TAPES
6830    WHEN CONTINUE KEY IS PRESSED, WRITE 1ST TAPE HEADER TO NEW TAPE
6840 A  WRITE A 2ND TAPE HEADER TO NEW TAPE
     B  DO ROUTINE 9850 & COME BACK (CLEAR SCREEN)
     C  SET BLOCK COUNT TO 1
     D  RETURN TO SENDING STATEMENT (6500A, 7200G)


7000 A  DO ROUTINE 9000-9030 & COME BACK (READ A TRANSACTION CARD)
     B  IF END OF DECK CARD WAS READ, SKIP TO 7020
     C  CHANGE THE LINE # IN THE 1ST CARD COLUMN INTO THE FORMAT FOR NUMERIC
        STORAGE
     D  GET THE TRANSACTION RECORD KEY (SOCIAL SECURITY #)
     E  -
     F  MOVE THE COLUMNS FROM THE CARD INTO THE PROGRAM STORAGE AREA FOR
        TRANSACTION INFORMATION
     G  RETURN TO SENDING STATEMENT (5000B, 5810C)
7020 A  MOVE END OF TRANSACTION SENTINEL VALUE TO RECORD KEY STORAGE AREA
     B  RETURN TO SENDING STATEMENT (5000B, 5810C)


7200 A  CLEAR THE SCREEN
     B  DO ROUTINE '40 (SEE 600) USING THE VALUE OF 7 & COME BACK (MOVE SCREEN
        CURSOR DOWN 7 LINES)
     C  -
     F  PRINT THE 4 LINES OF THE WORK AREA
     G  DO ROUTINE 6800-6840 & COME BACK (CHECK HOW MUCH TAPE HAS BEEN USED)
     H  WRITE WORK AREA TO NEW TAPE
     I  INCREASE 'WRITE' COUNT BY 1
     J  CLEAR WORK AREA TO BLANKS
     K  RETURN TO SENDING STATEMENT (5810G)
```

```
8000 A  SET J TO 0
     B  ALLOW KEYBOARD INPUT TO OCCUR & STORE IN J
     C  IF J IS NOW GREATER THAN 0, SKIP TO 8045 (SKILLS WERE ENTERED EARLIER)
8005    SET Y TO 0
8010    INCREASE Y BY 1
     B  IF NEW Y IS NOW GREATER THAN 15, SKIP TO 8040 (ONLY 15 SKILL CODES CAN
           BE ENTERED)
     C  -
     D  ALLOW KEYBOARD INPUT FOR A SKILL CODE
     E  IF INPUT WAS A NEGATIVE #, SKIP TO 8040
     F  CONDENSE CODE & MOVE IT INTO CODE TABLE AREA
     G  ALLOW KEYBOARD INPUT DESIGNATING THIS CODE AS EITHER REQUIRED OR
           OPTIONAL.  STORE INPUT IN ITS TABLE
     H  SPACE 1 LINE
     I  SKIP BACK TO 8010 FOR MORE ENTRIES
8040    DECREASE Y BY 1 TO MATCH THE NUMBER OF CODES STORED IN THE SEARCH TABLE
8045 A  -
     D  PRINT EACH CODE & 'OPTIONAL-REQUIRED' DESIGNATION
     E  SET X TO 0
     F  ALLOW KEYBOARD INPUT & STORE IN X
     G  IF X IS NOW GREATER THAN 0, SKIP TO 8005 (OPERATOR REQUESTED TO REPEAT
           THIS ENTIRE SECTION)
     H  RETURN TO SENDING STATEMENT (1000C, 2000D, 3000F)


8050 A  SET J TO 0
     B  ALLOW KEYBOARD INPUT & STORE IN J
     C  IF J IS GREATER THAN 0, SKIP TO 8080 (JOB DETAILS WERE ENTERED EARLIER)
8060 A  SET INTERNAL POINTER TO BEGINNING OF DATA LIST (SEE 9900)
     B  BEGIN LOOP X (DO 11 TIMES)
     C       READ NEXT TITLE IN DATA LIST (SEE 9900)
8070 A       SPACE 1 LINE
     B       PRINT TITLE
     C       ALLOW KEYBOARD INPUT (20 CHARACTERS MAXIMUM) & STORE IN
               DESCRIPTION TABLE
     D       PRINT LAST ENTRY FOR OPERATOR VERIFICATION
     E       SET J TO 0
     F       ALLOW KEYBOARD INPUT & STORE IN J
     G       IF J IS A 1, SKIP BACK TO 8070 SO OPERATOR CAN REPEAT THAT LAST
                ENTRY
     H  END LOOP X (GO BACK TO 8060B UNLESS FINISHED WITH 11TH LOOP)
8080 A  SET INTERNAL POINTER BACK TO BEGINNING OF DATA LIST (SEE 9900)
     B  BEGIN LOOP X (DO 11 TIMES)
     C       READ NEXT TITLE IN DATA LIST (SEE 9900)
     D       PRINT THAT TITLE & THE DESCRIPTION ENTERED PREVIOUSLY
     E  END LOOP X (GO BACK TO 8080B UNLESS FINISHED)
     F  SET J TO 0
     G  ALLOW KEYBOARD INPUT & STORE IN J
     H  IF J IS NOW GREATER THAN 0, SKIP TO 8060 (OPERATOR REQUESTED TO REPEAT
           THIS ENTIRE SECTION)
8085 A  STOP PROGRAM & PRINT OPERATOR INSTRUCTIONS
     B  SEND ALL FUTURE PRINTING TO THE LINE PRINTER USING A 75 CHARACTER LINE
           WIDTH
     C  SET J TO 0
     D  RETURN TO SENDING STATEMENT (1000D, 2000E)
```

```
8200 A  DO ROUTINE 8700 & COME BACK (PRINT VOCATIONAL SCHOOL LETTERHEAD)
     B  DO ROUTINE '40 (SEE 600) USING A 5 & COME BACK (SPACE 5 LINES)
     C  -
     E  PRINT STUDENT NAME & ADDRESS FROM WORK AREA
8210 A  DO ROUTINE '40 (SEE 600) USING A 3 & COME BACK (SPACE 3 LINES)
     B  -
     C  PRINT 2 SENTENCES OF THE LEAD PARAGRAPH
8220 A  -
     B  PRINT THE REST OF THE LEAD PARAGRAPH
     C  DO ROUTINE '40 (SEE 600) USING A 4 & COME BACK (SPACE 4 LINES)
8230 A  SET INTERNAL POINTER BACK TO BEGINNING OF DATA LIST (SEE 9900)
     B  BEGIN LOOP X (DO 11 TIMES)
     C       READ NEXT TITLE FROM DATA LIST (SEE 9900)
     D       PRINT THAT TITLE
     E       PRINT DESCRIPTION FOR THAT SECTION
     F       SPACE 1 LINE
     G  END LOOP X (GO BACK TO 8230B UNLESS FINISHED)
     H  MOVE PAPER TO TOP OF NEXT FORM
     I  RETURN TO SENDING STATEMENT (10100)


8400 A  DO ROUTINE 8700 & COME BACK (PRINT VOCATIONAL SCHOOL LETTERHEAD)
     B  DO ROUTINE '40 (SEE 600) USING A 4 & COME BACK (SPACE 4 LINES)
     C  -
     J  PRINT INDUSTRY ADDRESS, ETC, USING THE 1ST 4 ITEMS FROM THE DESCRIPTION
        TABLE
8410 A  -
8430 B  PRINT THE LEAD PARAGRAPH
8440 A  SPACE 1 LINE
     B  RETURN TO SENDING STATEMENT (2000F)


8500 A  REFER TO 8594 FOR FORMAT. PRINT SOCIAL SECURITY #, STUDENT NAME &
        STREET ADDRESS
     B  REFER TO 8595 FOR FORMAT. PRINT CITY, STATE, ZIP CODE, PHONE &
        BIRTHDATE FROM STUDENT RECORD
     C  SPACE 1 LINE
8505    REFER TO 8596 FOR FORMAT.  PRINT ENROLLMENT & ABSENCE INFORMATION
8510 A  SPACE 1 LINE
     B  REFER TO 8597 FOR FORMAT. PRINT COLUMN HEADINGS
     C  BEGIN LOOP L (DO TWICE TO CHECK LINES 3 & 4 OF WORK AREA)
     D       BEGIN LOOP W (CHECK EACH CODE LOCATION IN THE LINE)
     E            IF A CODE IS BLANK, SKIP TO 8520
     F            IF A CODE IS BINARY ZERO, SKIP TO 8520
     G            CHANGE CODE INTO REGULAR NUMERIC FORMAT
8515 A            CHANGE NUMERIC CODE TO PRINTING FORMAT
     B            REFER TO 8598 FOR FORMAT. PRINT YEAR, CODE, & SKILL LEVEL
8520 A       END LOOP W (GO BACK TO 8510D UNLESS FINISHED WITH A LINE)
     B  END LOOP L (GO BACK TO 8510C UNLESS FINISHED WITH BOTH LINES)
     C  SPACE 3 LINES
     D  RETURN TO SENDING STATEMENT (2010F)


8594    -
8598    PRINTLINE FORMATS USED IN ROUTINE 8500-8520
```

```
8700 A  DO ROUTINE '40 (SEE 600) USING 3 & COME BACK (SPACE 3 LINES)
     B  -
     C  PRINT SCHOOL LETTERHEAD
     D  RETURN TO SENDING STATEMENT (8200A, 8400A)


8800 A  MOVE INTERNAL POINTER TO 12TH ITEM OF DATA LIST (SEE 9910,9920)
     B  BEGIN LOOP X (DO 2 TIMES)
     C       BEGIN LOOP X1 (DO 12 TIMES)
     D            READ NEXT NUMBER IN DATA LIST INTO ARRAY (SEE 9910,9920)
     E            IF NUMBER INDICATES END OF THIS LIST, SKIP TO 8010
     F       END LOOP X1 (GO BACK TO 8800C UNLESS FINISHED)
8810 A  -
     B       ARTIFICIALLY FINISH LOOP X1
     C  END LOOP X (GO BACK TO 8800B UNLESS FINISHED)
     D  SET J TO ZERO
     E  ALLOW KEYBOARD INPUT & STORE IN J
     F  RETURN TO SENDING STATEMENT (5000A)


9000 A  -
9030 B  THIS ROUTINE USES UNIQUE WANG HARDWARE ADDRESSES, ETC TO READ ONE CARD
          FROM THE CARD READER.  THE 80 COLUMNS ARE STORED IN Z$(1) & Z$(2),
          40 COLUMNS IN EACH.  THE ROUTINE REACTS TO EMPTY HOPPER, ETC WITH AN
          OPERATOR MESSAGE.  END OF DATA IS SIGNIFIED BY A / IN COLUMN ONE, AT
          WHICH TIME E$ RETURNS AS 'END'
        RETURN TO SENDING STATEMENT (7000A)


9600 A  SEND ALL PRINTING TO THE SCREEN
     B  CLEAR THE SCREEN & PRINT THE 4 JOB OPTIONS FOR THE OPERATOR (UPDATE,
          STUDENT NOTICE, LIST TO INDUSTRY, OR TALLY SKILLS)
     C  ALLOW KEYBOARD ENTRY OF OPERATOR CHOICE & STORE IN J
     D  IF J IS A 1, SKIP TO 5000
        IF J IS A 2, SKIP TO 1000
        IF J IS A 3, SKIP TO 2000
        IF J IS A 4, SKIP TO 3000
     E  IF NO CORRECT ENTRY OCCURRED, SKIP BACK TO 9800A TO ALLOW OPERATOR TO
          TRY AGAIN


9850 A  CLEAR SCREEN
     B  RETURN TO SENDING STATEMENT (5710C, 5790D, 6130B, 6840B)


9860 A  WRITE TRAILER RECORD ON NEW MASTER TAPE
     B  REWIND NEW MASTER TAPE
     C  REWIND OLD MASTER TAPE
     D  RETURN TO SENDING STATEMENT (5050B)


9900    -
9920    DATA LIST OF SUBJECT TITLES & FIELD LOCATIONS
```

APPENDIX E

THE PROGRAM
(In BASIC)

1. This one program maintains all the files and produces all the output discussed in this report. It is designed to run on a Wang Labs 2200B-2 minicomputer utilizing cassette tape storage and punched card input. It presently occupies all but about 16 bytes of an 8K memory when all arrays are dimensioned, etc.

2. The program is written with a modular organization for ease of maintenance. The main program control logic is located in statements 1000-1020 (Student Letter), 2000-2040 (Notice to Industry), 3000-3040 (Tally), and 5000-5050 (File Maintenance). All other sections are routines used by the main program logic in various combinations. For example, every program segment that needs to search the skill codes in the student or industry records will use routine 500-520 to accomplish that search. Every program segment that needs the school letterhead printed at the top of the page will execute routine 8700.

3. The program is printed here in condensed form exactly as it exists in memory when running. Since the English translation is included in Appendix D, no segment titles or comments are included in this listing.

4. The master record input is controlled by routine 6000-6140. Master output is routine 6500-6510. Transaction input is routine 7000-7020. Applications using different types of peripherals should be able to interface by altering those routines to fit the hardware requirements.

5. Since statements 1000-5050 contain all the main logic, additional program segments can be written to overlay that section if memory beyond 8K is not available.

6. All numeric variables (no $ in the label) automatically occupy 8 bytes. All alphanumeric variables ($ in label) occupy from 1 to 64 bytes depending on the values specified in the Dimension statements at the beginning of the program. Default length is 16 bytes. The two digits inside the STRing function signify the starting point and the number of characters, respectively.

7. The Wang BASIC interpreter locates the destinations for GOTO, GOSUB and IF-THEN commands by searching through all statement numbers from the beginning of the program. For that reason, this program is constructed with somewhat of an inverted organization to maximize run time. Program segments that will be executed many times or that include many repetitive decisions are located near the beginning of the program. Those that occur less frequently or that execute in a straight line are located near the end of the program. Consequently, statement 30 sends the program out to 9800 for the operator questions that occur only once to start the program. In contrast, the search routine that will be used for all outputs and that will be repeated for every student record that is searched is located near the beginning (500-520) so there will be a minimum loss of time whenever some command calls for statement 500 to be located.

```
10COM D$(11)20,S$(15)3,L$(15)1,Y
20DIM M1$(4)58,W$(4)58,F(2,12),N2$9,T$58,T1$3,T9$16,N1$9,W$9,E$3,Z$(3)40,E1
$1,E9$9,E8$9,D1$1,D2$1,F$1,H$1,S$1,T(15),Z9$10
30E9$="999999999":E8$="999999998":INIT(0A)Z9$:SELECT #210B,#310C:R9,W9=0:GO
TO 9800


300S$="1":H$="0":FOR X=1TO Y:T1$=S$(X):IF L$(X)<>"0"THEN 350:GOSUB 500:IF F
$<>"1"THEN 320:S$="1"
310NEXT X:IF S$<>"1"THEN 330:F$="1":RETURN
320X=Y:NEXT X
330F$="0":RETURN
350IF L$(X)<>H$THEN 370:IF S$="1"THEN 310
360S$="0":GOSUB 500:H$=L$(X):IF F$<>"1"THEN 310:S$="1":GOTO 310
370IF S$="1"THEN 360:GOTO 320


500F$="0":FOR L=3TO 4:FOR W=1TO 51STEP 5:IF STR(W$(L),W,5)=" "THEN 520:IF S
TR(W$(L),W+1,3)=T1$THEN 510:NEXT W:NEXT L:RETURN
510F$="1"
520L1=L:W1=W:W=51:NEXT W:L=4:NEXT L:RETURN


600DEFFN'40(Z9):PRINT STR(Z9$,1,Z9):RETURN


700FOR X=1TO Y:T1$=S$(X):GOSUB 500:IF F$<>"1"THEN 710:T(X)=T(X)+1
710NEXT X:RETURN


1000PRINT HEX(03);"NOTICE TO STUDENT":PRINT :GOSUB 8000:GOSUB 8050
1010GOSUB 6000:IF N1$=E9$THEN 1020:GOSUB 5900:IF STR(W$(2),26,4)<="0000"THE
N 1010:GOSUB 300:IF F$<>"1"THEN 1010:GOSUB 8200:GOTO 1010
1020SELECT PRINT 005(64):REWIND #2:STOP "JOB DONE"


2000SELECT PRINT 005(64):PRINT HEX(03);"NOTICE TO INDUSTRY":PRINT :GOSUB 80
00:GOSUB 8050:GOSUB 8400
2010GOSUB 6000:IF N1$=E9$THEN 2040:GOSUB 5900:GOSUB 300:IF F$<>"1"THEN 2010
:GOSUB 8500:GOTO 2010
2040PRINT HEX(0C):SELECT PRINT 005(64):REWIND #2:STOP "JOB DONE"


3000FOR X=1TO 15:T(X)=0:NEXT X:PRINT HEX(03);"TALLY":PRINT :GOSUB 8000
3010GOSUB 6000:IF N1$=E9$THEN 3040:GOSUB 5900:GOSUB 700:GOTO 3010
3040FOR X=1TO Y:HEXPRINT S$(X);:PRINT "  ";T(X),:NEXT X:PRINT :REWIND #2:ST
OP "JOB DONE"
```

```
5000GOSUB 8800:GOSUB 7000
5010GOSUB 6000
5020IF N1$>=N2$THEN 5030:GOSUB 6500:GOTO 5010
5030IF N1$>N2$THEN 5040:GOSUB 5900:GOSUB 5800:GOTO 5010
5040IF N2$=E8$THEN 5050:GOSUB 5800:GOTO 5020
5050GOSUB 6500:GOSUB 9860:STOP "JOB DONE"


5400ON LGOTO 5410:IF STR(W$(1),1,9)=" "THEN 5790:IF L>2THEN 5500
5410Y=0
5420Y=Y+1:IF F(L,Y)=9900THEN 5470:F=F(L,Y):S1=INT(F/100):S2=F-(S1*100):IF S
TR(T$,S1,S2)=" "THEN 5420:STR(W$(L),S1,S2)=STR(T$,S1,S2):GOTO 5420
5470IF STR(W$(1),1,9)=" "THEN 5790:RETURN
5500IF L>3THEN 5600
5510FOR S1=1TO 46STEP 9:IF STR(T$,S1,9)=" "THEN 5530:CONVERT STR(T$,S1+2,6)
TO T1:PACK(#######)T1$FROMT1:GOSUB 500:IF STR(T$,S1+8,1)="9"THEN 5520
5515CONVERT STR(T$,S1,9)TO T1:PACK(##########)STR(W$(L1),W1,5)FROMT1:NEXT S1
:RETURN
5520INIT(00)STR(W$(L1),W1,5):NEXT S1:RETURN
5530S1=46:NEXT S1:RETURN
5600IF L>6THEN 5700:IF STR(W$(2),26,4)=" "THEN 5620:CONVERT STR(W$(2),26,4)
TO W5
5610CONVERT STR(T$,1,4)TO T5:ON L-4GOSUB 5640,5650:CONVERT W5TO STR(W$(2),2
6,4),(####):RETURN
5620W5=0:GOTO 5610
5640W5=W5+T5:RETURN
5650W5=W5-T5:RETURN
5700IF L<>9THEN 5710:D1$="1":RETURN
5710PRINT "LINE # ERROR",N2$,L:STOP :GOSUB 9850:RETURN
5790PRINT "ACTIVITY SKIPPED -NO MASTER RECORD FOR ";N2$:D2$="1":STOP :GOSUB
9850:RETURN


5800W$=N2$:D1$=" "
5810D2$=" ":GOSUB 5400:GOSUB 7000:IF W$=N2$THEN 5810:IF D1$>" "THEN 5820 IF
D2$>" "THEN 5820:GOSUB 7200:RETURN
5820INIT(" ")W$():RETURN


5900FOR X=1TO 4:W$(X)=M1$(X):NEXT X:RETURN


6000IF E1$<>"1"THEN 6110:DATA LOAD #2,M1$():IF END THEN 6100:N1$=STR(M1$(1)
,1,9):IF N1$=E9$THEN 6010:R9=R9+1
6010RETURN
6100REWIND #2
6110ON JGOTO 6140:STOP "LOAD OLD MASTER ON #2":E1$="1"
6120DATA LOAD #2,"VOC"
6130DATA LOAD #2,"VOC":GOSUB 9850:GOTO 6000
6140INIT("9")N1$,M1$():GOTO 6010
```

```
6500GOSUB 6800:DATA SAVE #3,M1$():IF N1$=E9$THEN 6510:W9=W9+1
6510PRINT HEX(01);STR(M1$(1),1,28);TAB(40);"R=";R9;"W=";W9:RETURN


6800B=B+1:ON BGOTO 6820:IF B>550THEN 6810:RETURN
6810DATA SAVE #3,END :REWIND #3
6820STOP "LOAD NEW MASTER ON #3"
6830DATA SAVE #3,OPEN "VOC"
6840DATA SAVE #3,OPEN "VOC":GOSUB 9850:B=1:RETURN


7000GOSUB 9000:IF E$="END"THEN 7020:CONVERT STR(Z$(1),1,1)TO L:N2$=STR(Z$(1
),2,9):STR(T$,1,30)=STR(Z$(1),11,30):STR(T$,31,28)=STR(Z$(2),1,28):RETURN
7020N2$=E8$:RETURN


7200PRINT HEX(03):GOSUB '40(7):PRINT W$(1):PRINT W$(2):HEXPRINT W$(3):HEXPR
INT W$(4):GOSUB 6800:DATA SAVE #3,W$():W9=W9+1:INIT(" ")W$():RETURN


8000J=0:INPUT "ENTER 1 IF SKILLS ALREADY ENTERED,ELSE EXEC.",J:IF J>0THEN 8
045
8005Y=0
8010Y=Y+1:IF Y>15THEN 8040:PRINT "ENTER 6 DIGIT SKILL #";Y;" (NEG.#=STOP)":
INPUT S:IF S<0THEN 8040:PACK(######)S$(Y)FROMS:L$(Y)="0":INPUT "LINE # IF O
PTIONAL, ELSE EXEC",L$(Y):PRINT :GOTO 8010
8040Y=Y-1
8045FOR X=1TO Y:PRINT L$(X);" ";:HEXPRINT S$(X):NEXT X:X=0:INPUT "ENTER 1 T
O REPEAT ENTRIES, ELSE EXEC.",X:IF X>0THEN 8005:J=0:RETURN


8050J=0:INPUT "ENTER 1 IF JOB INFO ALREADY ENTERED, ELSE EXEC.",J:IF J>0THE
N 8080
8060RESTORE :FOR X=1TO 11:READ T9$
8070PRINT :PRINT T9$;" (NO COMMAS,20#)":INPUT D$(X):PRINT D$(X);TAB(30);"EN
TER 1 TO REPEAT,ELSE EXEC";:J=0:INPUT J:ON JGOTO 8070:NEXT X
8080RESTORE :FOR X=1TO 11:READ T9$:PRINT T9$;"  ";D$(X):NEXT X:J=0:INPUT "E
NTER 1 TO REPEAT, ELSE EXEC",J:IF J>0THEN 8060
8085STOP "LOAD PAPER TO 1ST FOLD & TURN ON PRINTER":SELECT PRINT 215(75):J=
0:RETURN


8200GOSUB 8700:GOSUB '40(5):PRINT "TO: ";STR(W$(1),10,19);"  ";STR(W$(1),1,
9):PRINT "    ";STR(W$(1),29,15):PRINT "    ";STR(W$(1),44,13);" ";STR(W$(1
),57,2);"  ";STR(W$(2),1,5)
8210GOSUB '40(3):PRINT "     THE FOLLOWING JOB POSSIBILITY HAS COME TO OUR
ATTENTION.":PRINT "ITS REQUIREMENTS FIT YOUR VOCATIONAL SKILLS AS RECORDED
ON OUR FILES."
8220PRINT "IF YOU'RE INTERESTED, CHECK AS OUTLINED BELOW.":PRINT "WHATEVER
YOU DO, WE WISH THE BEST FOR YOU.":GOSUB '40(4)
8230RESTORE :FOR X=1TO 11:READ T9$:PRINT T9$:PRINT "    ";D$(X):PRINT HEX(0
A):NEXT X:PRINT HEX(0C):RETURN
```

```
8400GOSUB 8700:GOSUB '40(4):PRINT "TO: ";D$(1):PRINT "     ";D$(2):PRINT "
  ";D$(3);:PRINT :PRINT "ATTN: ";D$(4):PRINT :PRINT "SUBJECT: ";D$(6):PRINT

8410PRINT "     ACCORDING TO OUR RECORDS, THESE STUDENTS HAVE THE SKILLS":P
RINT "YOU SPECIFIED FOR THE ABOVE POSITION."
8420PRINT "     EACH ENTRY INCLUDES ADDRESS, PHONE, AND BIRTHDATE WHEN AVAI
LABLE,":PRINT "IN ADDITION TO ALL RECORDED SKILLS."
8430PRINT "     THE 'LEVEL' COLUMN IN THE SKILL LISTING IS CODED AS:":PRINT
"0= N/A; 1= EXCEPTIONAL; 2= ABOVE AVERAGE; 3= AVERAGE; 5= OJT (STUDENT'S
 ENTRY; NO INSTRUCTER EVALUATION)"
8440PRINT HEX(0A):RETURN


8500PRINTUSING 8594,STR(W$(1),1,9);STR(W$(1),10,19);STR(W$(1),29,15):PRINTU
SING 8595,STR(W$(1),44,13);STR(W$(1),57,2);STR(W$(2),1,5);STR(W$(2),6,7);ST
R(W$(2),13,6):PRINT
8505PRINTUSING 8596,STR(W$(2),20,3);STR(W$(2),23,3)
8510PRINT :PRINTUSING 8597:FOR L=3TO 4:FOR W=1TO 51STEP 5:IF STR(W$(L),W,5)
="  "THEN 8520:IF STR(W$(L),W,2)=HEX(0000)THEN 8520:UNPACK(##########)STR(W$(
L),W,5)TO W5
8515CONVERT W5TO W$,(##########):PRINTUSING 8598,STR(W$,1,2);STR(W$,3,6);STR
(W$,9,1)
8520NEXT W:NEXT L:PRINT HEX(0A0A0A):RETURN


8594% #########       ####################         ################
8595%      ##############  ##  #####   PHONE #######  BIRTH ######
8596%      DAYS ENROLLED ###  ABSENCES  ###
8597%       YR. CERTIFIED  SKILL NO.    LEVEL
8598%            '##        ######       #


8700GOSUB '40(3):PRINT TAB(14);"N. LAWRENCE AREA VOCATIONAL-TECHNICAL CENTE
R":PRINT TAB(24);"BOX 729, BEDFORD, IN.  47421":RETURN


8800RESTORE 12:FOR X=1TO 2:FOR X1=1TO 12:READ F(X,X1):IF F(X,X1)=9900THEN 8
810:NEXT X1
8810X1=12:NEXT X1:NEXT X:J=0:INPUT "DOES MASTER FILE EXIST,1=NO,ELSE EXEC",
J:RETURN


9000 DATA LOAD BT(N=82)/629,Z$():DATA SAVE BT/42E,B$:IF STR(Z$(1),1,1)="/"
THEN 9030:IF Z$(3)=HEX(5000)THEN 9020:IF Z$(3)=HEX(5002)THEN 9020:IF Z$(3)=
HEX(50C0)THEN 9020
9010 STOP " CHECK CARDREADER PROBLEM, THEN PUSH CONTINUE":GOTO 9000
9020 RETURN
9030 E$="END":RETURN


9800SELECT PRINT 005(64):PRINT HEX(03);"1= UPDATE":PRINT "2= STUDENT NOTICE
":PRINT "3= LIST TO INDUSTRY":PRINT "4= TALLY SKILLS":INPUT "CHOICE",J:ON J
GOTO 5000,1000,2000,3000:GOTO 9800
```

```
9850PRINT HEX(03):RETURN
```



```
9860DATA SAVE #3,END :REWIND #3:REWIND #2:RETURN


9900DATA "COMPANY NAME","ST. ADDRESS","CITY STATE ZIP","CONTACT","PHONE","JO
B TITLE","LATEST DATE OPEN","HOURS","RATE","MISC 1","MISC 2"
9910DATA 109,1019,2915,4413,5702,9900
9920DATA 105,607,1306,1901,2003,2303,2604,3014,4403,9900
```

CROSS REFERENCE TABLE OF VARIABLES

NUMERIC VARIABLES (SYSTEM ASSIGNS 8 BYTES EACH)

```
B      ---   6800,6840  (TAPE BLOCK COUNTER)
F      ---   5420   (WORK AREA FOR COMPUTING FIELD LOCATION IN MASTER RECORD)
J      ---   6110,8000,8045,8050,8070,8080,8085,8810,9800   (INPUT FOR
             OPERATOR DECISIONS)
L      ---    500,  520,5400,5420,5500,5600,5610,5700,5710,7000,8510,8520
             (LINE # IN MASTER RECORD)
L1     ---    520,5515,5520   (HOLD VARIABLE FOR LINE #)
R9     ---     30,6000,6510   (COUNTER FOR RECORDS READ)
S      ---   8010   (INPUT FOR SKILL CODE)
S1     ---   5420,5510,5515,5520,5530   (STARTING LOCATION OF FIELD IN
             MASTER RECORD)
S2     ---   5420   (LENGTH OF FIELD IN MASTER RECORD)
T1     ---   5510,5515   (HOLD VARIABLE FOR SKILL CODE IN UPDATE PROCESSING)
T5     ---   5610,5640,5650   (POSTAGE IN TRANSACTION RECORD)
W      ---    500,  520,8510,8520   (LOOP COUNTER IN WORK AREA)
W1     ---    520,5515,5520   (HOLD FOR W VALUE)
W5     ---   5600,5610,5620,5640,5650,8510,8515   (WORK AREA FOR POSTAGE &
             SKILL CODES)
W9     ---     30,6500,6510,7200   (COUNTER FOR RECORDS WRITTEN TO NEW TAPE)
X      ---    300,  310,  320,  350,  360,  700,  710,3000,3040,5900,8045,8060,8070,
             8080,8230,8800,8810   (MISC. LOOP COUNTER)
X1     ---   8800,8810   (MISC. LOOP COUNTER)
Y      ---     10,  300,  320,  700,3040,5410,5420,8005,8010,8040,8045
             (MISC. LOOP COUNTER)
Z9     ---    600   (FUNCTION ARGUMENT TO CONTROL LINE SPACING)
```

ALPHANUMERIC VARIABLES (NUMBER FOLLOWING THE $ INDICATES BYTES USED)

```
D1$1 ---     20,5700,5800,5810   (DELETE SWITCH)
D2$1 ---     20,5790,5810   (TEMPORARY DELETE SWITCH)
E$3  ---     20,7000,9030   (END OF CARD DECK)
E1$1 ---     20,6000,6110   (INITIAL TAPE READ SWITCH)
E8$9 ---     20,   30,5040,7020   (END OF TRANSACTION SENTINEL)
E9$9 ---     20,   30,1010,2010,3010,6000,6500   (END OF MASTER SENTINEL)
F$1  ---     20,  300,  310,  330,  360,  500,  510,  700,1010,2010   (FOUND SWITCH)
H$1  ---     20,  300,  350,  360   (HOLD VARIABLE FOR OPTIONAL CODE REQUESTS)
N1$9 ---     20,1010,2010,3010,5020,5030,6000,6140,6500   (MASTER KEY)
N2$9 ---     20,5020,5030,5040,5710,5790,5800,5810,7000,7020   (TRANSACTION
            KEY)
S$1  ---     20,  300,  310,  350,  360,  370   (OPTION FOUND SWITCH)
T$58 ---     20,5420,5510,5515,5610,7000   (TRANSACTION RECORD)
T1$3 ---     20,  300,  500,  700,5510   (WORK AREA FOR REQUESTED SKILL CODE)
T9$16---     20,8060,8070,8080,8230   (TITLES FOR LETTER CONTENTS)
W$9  ---     20,5800,5810,8515   (HOLD WORK AREA RECORD KEY; 8515 = WORK
            AREA FOR CODE PRINTING)
Z9$10---     20,   30,  600   (CONTROL CURSOR LINE SPACING)
```

ARRAYS (ARRAY DIMENSIONS ARE WITHIN PARENTHESES; BYTES USED FOR ALPHANUMERICS ARE TO THE RIGHT OF THE PARENTHESES)

```
T(15)---     20, 700,3000,3040   (TOTALS FOR SKILL TALLY)
D$(11)20     10,8070,8080,8230,8400   (DATA AREA FOR JOB INFORMATION)
L$(15)1-     10, 300, 350, 360,8010,8045   (LINE # OF CODES; USED TO
           INDICATE OPTIONAL REQUESTS)
M1$(4)58     20,5900,6000,6140,6500,6510   (MASTER INPUT RECORD)
S$(15)3-     10, 300, 700,3040,8010,8045   (STORAGE FOR CODES TO BE SEARCHED)
W$(4)58-     20, 500,1010,5400,5420,5470,5515,5520,5600,5610,5820,5900,7200
           8200,8500,8505,8510   (WORK AREA FOR MASTER RECORD)
Z$(3)40-     20,7000,9000   (CARD READER ARRAY)
F(2,12)-     20,5420,8800   (TABLE OF FIELD POSITIONS IN 1ST 2 LINES OF
           MASTER RECORD)
```

APPENDIX F

REQUEST FOR SKILL CODE SEARCH

1. This form is used to request information from either the student or the industry file. It provides the information necessary to produce any of five different outputs: (A) a separate letter for each student who is to be notified of the job opening (see Appendix G), (B) a list of possible student applicants for use by the school staff or by the requesting employer (see Appendix H), (C&D) a count of the number of occurrances of any skill code in either the student or the industry file, (E) a list of all job positions within the industry file that call for a particular skill or skill combination (Appendix H with industry information replacing the student output).

2. The content of the job information section is input to the search program and becomes either the essential content of the student letter or the company address, etc. for the list of possible applicants.

3. Up to 15 skill codes can be searched at one time. All those codes that are required are entered down the left column. Only those students that have every one of those skills will be output to print. However, in some instances, alternatives may be considered. That is, the employer may be looking for someone who could either do "this" or "that." Those options would be entered in some horizontal row on this form and, as a result, all those student records that contain either one of the optional codes will be output to print. Requests may combine any combination of required and optional skills up to the 15 code maximum.

F-2

REQUEST FOR SKILL CODE SEARCH

Output Required (Check any Combination)

1. _____ Student Letter; 2. _____ List of Potential Applicants (Student File); 3. _____ Tally of Skills (Student File)
4. _____ Tally of Skills (Industry File) 5. _____ List of Job Locations (Industry File)

Job Information (Outputs 1 and 2 required the first 4 blanks. Limit all entries to 20 characters, including spaces)

Company Name _____ Company Address _____ City, State, Zip Code _____

Contact _____ Phone _____ Job Title _____ Last Date to Apply _____

Shift Hours _____ Pay Rate _____ Misc. Comment No. 1 _____ Misc. Comment No. 2 _____

Skill Codes (Six digits each. Maximum number of entries = 15)

(Place required codes in first column. Place optional codes on any row so that the optional group occupies a horizontal line.)

1. _____ (or) _____ (or) _____
(and)
2. _____ (or) _____ (or) _____
(and)
3. _____ (or) _____ (or) _____
(and)
4. _____ (or) _____ (or) _____
(and)
5. _____ (or) _____ (or) _____
(and)
6. _____ (or) _____ (or) _____
(and)
7. _____ (or) _____ (or) _____
(and)
8. _____ (or) _____ (or) _____
(and)
9. _____ (or) _____ (or) _____

_____ Date _____ Signature of Initiator

APPENDIX G

NOTIFICATION TO STUDENTS

1. One of these letters is automatically produced for each student whose record contains the requested skill combination and whose postage account indicates that the student wishes the record to be active for this purpose. The letter is printed on continuous form paper perforated on both sides so as to produce an 8 1/2 x 11 page when the perforated strips are removed. When folded so the address shows through a window envelope, the letter is ready for mailing.

2. The specific job information is entered into the program by the operator at the beginning of the run. It comes from the contents of the Request for Skill Code Search (Appendix F).

N. LAWRENCE AREA VOCATIONAL-TECHNICAL CENTER
BOX 729, BEDFORD, IN. 47421

TO: GOLDEN, RAY 333333333
333 33RD
HELTONVILLE IN 47569

THE FOLLOWING JOB POSSIBILITY HAS COME TO OUR ATTENTION.
ITS REQUIREMENTS FIT YOUR VOCATIONAL SKILLS AS RECORDED ON OUR FILES.
IF YOU'RE INTERESTED, CHECK AS OUTLINED BELOW.
WHATEVER YOU DO, WE WISH THE BEST FOR YOU.

COMPANY NAME
ABC COMPANY

ST. ADDRESS
1419 29TH

CITY STATE ZIP
BEDFORD IN 47421

CONTACT
MR. PARSONS

PHONE
279-6598

JOB TITLE
DIE CASTER

LATEST DATE OPEN
MAY 25 '77

HOURS
5 PM TO 2 AM

RATE
5.69/HOUR

MISC 1
MUCH STANDING

MISC 2
MUST ACCEPT OVERTIME

APPENDIX H

LIST OF POTENTIAL APPLICANTS FOR SPECIFIC JOBS
(Used by School Staff or Requesting Industry)

1. This list will include every student in the file whose record contains the requested skill combination and whose postage account indicates that the student wishes the record to be active for this purpose. All skills included in that record are printed.

2. In the long run, this type of output will probably most frequently be used by the school staff rather than being sent to the company for whom the search was initiated.

N. LAWRENCE AREA VOCATIONAL-TECHNICAL CENTER
BOX 729, BEDFORD, IN. 47421

TO: ABC COMPANY
1419 29TH
BEDFORD IN 47421
ATTN: MR. PARSONS

SUBJECT: DIE CASTER

ACCORDING TO OUR RECORDS, THESE STUDENTS HAVE THE SKILLS YOU SPECIFIED FOR THE ABOVE POSITION.

EACH ENTRY INCLUDES ADDRESS, PHONE, AND BIRTHDATE WHEN AVAILABLE, IN ADDITION TO ALL RECORDED SKILLS.

THE 'LEVEL' COLUMN IN THE SKILL LISTING IS CODED AS:

0= N/A; 1= EXCEPTIONAL; 2= ABOVE AVERAGE; 3= AVERAGE; 5= OJT (STUDENT'S ENTRY; NO INSTRUCTER EVALUATION)

111222333 SMITH, ROBIN 123 11TH
BEDFORD IN 47421 PHONE 2793561 BIRTH 032558

DAYS ENROLLED 178 ABSENCES 005

YR. CERTIFIED	SKILL NO.	LEVEL
'77	170401	3
'77	170402	3
'77	170403	3
'77	170404	2
'77	170405	3

333333333 GOLDEN, RAY 333 33RD
HELTONVILLE IN 47421 PHONE 8345601 BIRTH 053157

DAYS ENROLLED 172 ABSENCES 003

YR. CERTIFIED	SKILL NO.	LEVEL
'77	170401	2
'77	170403	2
'77	170405	2
'77	170406	2

APPENDIX I

COVER LETTER REQUESTING INDUSTRY INPUT

1. This letter accompanies a group of skill-catalog pages that are sent to local industries that have indicated a willingness to assist us in the continuing revision of the skill catalog.

2. The input received in this way is combined with staff input derived from industry interviews, etc. to make up the industry file of those job titles requiring specific combinations of skills. All company input is processed and stored in the same general format as that used for student records. Each job title within a company constitutes a separate record in the industry file.

North Lawrence Vocational-Technical Center

P.O. Box 759 Bedford, Indiana 47421

Dear Colleague:

The North Lawrence Vocational-Technical Center is attempting to catalog skills required for entry-level positions in this geographical area. Such a skill file will be used for curriculum evaluation, student career information and student placement assistance.

We request your assistance in this endeavor. We are interested in all the job titles within your firm for which you would consider employing a recent high-school graduate who had the necessary skills but no previous job experience.

On the cover sheet of each of the enclosed skill lists, please indicate the job title you are rating and the number of such positions that exist in your firm (not current vacancies, but total number of positions). On the list that is attached, please check all those skills that you would consider as essential when evaluating applicants for that particular job. (Note that we are not asking for every little skill that is involved on the job, just those skills you use to make choices between applicants.) If possible, after you have checked the appropriate skills, number them in order of importance beginning with one as the most important. Feel free to write in essential skills that we may have omitted from this initial list.

Please write your company's name, address, etc. on the front of just one of the sets, then return all ratings in the enclosed envelope. Your assistance is most appreciated.

Sincerely yours,

Don Piper
Director

Dr. Dan A. Schafer, Superintendent
Don Piper, Director of Vocational Education
Russel Blackburn, Career Counselor